THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte THOMAS H. JUDD

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Appeal No. 95-4414
Application 08/143,007[1]

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ON BRIEF

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Before JERRY SMITH, FLEMING and CARMICHAEL, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 5-13 under 35

[1] Application for patent filed October 26, 1993.

U.S.C. § 101 and of claims 1, 5 and 14 under 35 U.S.C. § 103. Claims 2-4 were indicated as containing allowable subject matter. After the initial brief was filed, this case was remanded to the examiner for consideration of the Section 101 issue in view of guidelines which had been promulgated by the Commissioner. Upon remand, the examiner withdrew the rejection of claims 5-13 under 35 U.S.C. § 101 and indicated that claims 6-13 now contained allowable subject matter [supplemental answer]. Therefore, only the rejection of claims 1, 5 and 14 under 35 U.S.C. § 103 remains on appeal before us.

The claimed invention pertains to an apparatus and method for predicting the subjective image quality of a reference image which has undergone a specified level of compression and decompression. More specifically, intensity variation loss information is determined for image data which has not been processed and for image data which has been compressed and decompressed. A comparison of this information is used to generate a quality rating which predicts the subjective quality of the processed image.

Representative claim 1 is reproduced as follows:

1. An apparatus for predicting subjective image quality of a reference image given a pre-specified level of compression, comprising:

a compressor for receiving and compressing the reference image at the pre-specified level of compression;

a decompressor connected to said compressor for decompressing the compressed reference image to produce a processed image;

a blocking estimation processor connected to said decompressor for receiving the reference image and said processed image, said blocking estimation processor including means for segmenting the reference image and said processed image each into an array of blocks, wherein each block has an intensity variation, and means for generating intensity variation loss information regarding the percentage of blocks of said processed image having less than a pre-determined fraction of the intensity variation of a corresponding block of the reference image; and

a quality rating generator connected to said blocking estimation processor for generating an impairment level based on said intensity variation loss information, which level indicates a quality rating which predicts the subjective quality of said processed image.

The examiner relies on the following reference:

Bovik et al. (Bovik)	5,282,255	Jan. 25, 1994 (filed June 17, 1991)

Claims 1, 5 and 14 stand rejected under 35 U.S.C. § 103. As evidence of obviousness the examiner offers Bovik taken alone.

Rather than repeat the arguments of appellant or the examiner, we make reference to the brief and the answers for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the examiner and the evidence

of obviousness relied upon by the examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellant's arguments set forth in the brief along with the examiner's rationale in support of the rejection and arguments in rebuttal set forth in the examiner's answers.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in claims 1, 5 and 14. Accordingly, we reverse.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole

or knowledge generally available to one having ordinary skill in the art. Uniroyal Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

With respect to each of claims 1, 5 and 14, the examiner basically finds that Bovik teaches all of the claimed features except for the switch operating in the claimed manner. The examiner notes that Bovik discloses a switch, and the examiner reasons that it would have been obvious to the artisan to modify Bovik to use the switch as claimed [answer, pages 11-13]. On the other hand, appellant argues that 1) Bovik is not related to predicting subjective image quality; 2) there is nothing in Bovik to suggest operating on a processed image as well as a reference image; 3) there is no generation in Bovik of variation loss information regarding the percentage of blocks of the processed

image having less than a predetermined fraction of the intensity variation of a corresponding block of the reference image; 4) there is no generation in Bovik of an impairment level based on the intensity variation loss information; and 5) the switch in Bovik does not suggest the operation performed by appellant's claimed switch [brief, pages 14-18]. Each of appellant's arguments is correct and is sufficient to justify reversal of the examiner's rejection.

It is sufficient for this decision to merely consider the argument referred to as "2" above. All of the means and steps of the claimed blocking estimation processor are based on a separate analysis of a signal after it has been processed by compression and decompression with the same signal without any processing. In our view, Bovik does not operate on a reference image and a processed image so that none of the steps or means of the claimed invention which relate to the processing of two different images are suggested by Bovik.

The examiner suggests that the image signals coming from storage device 14 and camera 11 in Bovik represent the two different signals as claimed. We do not agree. The signals in storage device 14 are the exact same signals as are generated by digitizer 12 of Bovik. If the digitizer is the compression

device as argued by the examiner, then the reference image, which is defined as the image before compression, is never fed to Bovik's microprocessor for separate processing. Regardless of where one considers the processing to take place in Bovik, there is no calculation of the claimed values for both a reference image and a processed image. Since all the claims on appeal recite this form of parallel processing of two images, there is no way that Bovik can reasonably suggest the invention as claimed.

The decision of the examiner rejecting claims 1, 5 and 14 is reversed.

REVERSED

JERRY SMITH Administrative Patent Judge	)
MICHAEL R. FLEMING Administrative Patent Judge	) BOARD OF PATENT) APPEALS AND) INTERFERENCES

)
JAMES CARMICHAEL)
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